

20 30 40 50 60 70 80
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WT CI-2 MNLKTEWPELVGKSVEEAKKVILQDKPEAQIIIVLPV-GTIV-TMEYRIDRVRLFVDKLDNIAQVPRVG
Homologs

1 GAKTSWPEVVGMSAEKAKEIILRDKNPNAQIEVIPV-DAMV-PLNFNPNRVFLVHKATVVAZVSRVG
2 GAKTEWPELVGCTIKEAKEKIKADRPDLKVIVIPV-GSIV-TQEIDLNRVRVWVDKV---AKVPKIG
3 GAKTSWPEVVGLSVEDAKKVILKDKPDADIVVLPV-GSVV-TADYRPNRVRIFVDIV---AQTPHIG
4 --RTSWPELVGSAAEARK-IKEEMPEAEIQVVPQ-DSFV-TADYKQQRVRLYVDES NKVVRAAPIG
5 AEKSSWPELVGEDGEEAVKIIQQENPSLDVILMPR-GQNWATLDCRPNRVRVFENDES GKVNSIPRIG
6 TRKTSWPELVGVTAEEAE-KIKEEMSGVEIQVVPQ-GSFV-TADYKQQRVRLYVDES NKVTRTPGIG
7 PTKTSWPELVGVTAEQAE TKIKEEMVDVQIQVSPH-DSFV-TADYNPKRVRKYVDES NKVTRTPSIG
8 VTKERWPELLGTPAKFAMQIIQKENPKLTNVQTVLNGTPV-TEDLRCNRVRLFVNVLDFVVQTPQVG
9 NKKETWPELIGVPAKFAREIIQKENS KLTNVPSVLNGSPV-TKDFRCERVRLFVNVLDFVVQIPRVG
10 VGKNTWPELGCARGEAAATVETENPSVTAIVPE-GSIV-TTDERCDRVRVWVDENGIVTRVPVIG
11 QGKSSWPQLVGSTGAAAKAVIERENPRVRAVIIKV-GSGA-TKDFRCDRVRVWVTERGIVARPP TIG
12 PGKSSWPHLVGVGGSVAKAIIERQNPNVKAVILEE-GTPV-TKDFRCNRVR IWNKRGLVVSPPRIG
13 DGKLQWPELIGVPTTKLAKEIIEKQNSLISNVHILLNGSPV-TMDFRCNRVRLFDDILGSVVQIPRVA
14 NGKLSWPELIGVPAHYAKGIIIEKENS LITNVQILLNGSPV-TMDYRCNRVRLFDN ILGDVVQIPRVA
15 KGKQFWPELIGVPALYAKGIIIEKENPSITNIPILLNGSPV-TKDFRCDRVRLFVNILGDVVQIPRVT
16 VTKESWPELLGTPAKFAKQIIQKENPKLTNVETLLNGSAF-TEDLRCNRVRLFVNLLDIVVQTPKVG
17 EGKQMWPELIGVPTTKLAKEIIEKENPSITNIPILLSGSPI-TLDDYLCDRVRLFDN ILGFVVQMPVVT
18 PGKQEWPELVGEYGYKAAAIIERENPNVRSIVKHE-RSGF-TKDFRCDRVWVVDSTGVVVRTPRVT
19 VIFNSWSVLTGTNGDYAAVVIERENPTVNAAVILD-GSPV-TADFERCDRVRVFVDGNRIVVKT PKSG

Figure 1

SEQUENCES OF BHL PROTEINS

	10	20	30	40	50	60	70	80
WT CI - 2 (native)	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG	* SSVEKKPEGVNTGAGDRHNLKTEWPELVGKSVEEAKKVIILQDKPEAQIIIVLPVGTIVTMEYRIDRVRLFVDKLDNIAQVPRVG
WT CI-2								
BHL1								
BHL2								
BHL3								
BHL3N								
BHL4								
BHL5								
BHL6								
BHL8								
BHLX								
BHLXP								